

# Correspondence

*The Editorial Board will be pleased to receive and consider for publication correspondence containing information of interest to physicians or commenting on issues of the day. Letters ordinarily should not exceed 600 words, and must be typewritten, double-spaced and submitted in duplicate (the original typescript and one copy). Authors will be given an opportunity to review any substantial editing or abridgement before publication.*

## Immunization for Measles

TO THE EDITOR: In "Measles Transmission in Medical Facilities"<sup>1</sup> in the March issue, Drs Dales and Kizer recommend "routine immunization of new medical facility staff members born since 1956 . . . who lack documentation of prior immunization or disease," because "serologic surveys in California have indicated that, currently, perhaps 10% to 15% of young adults (ages 18 to 22 years) are susceptible to measles." This would apply where there is a lack of an immunization record showing month and year of immunization or where the diagnosis of measles was not made by a physician. I question the need for that recommendation, because more than 90% of those who will be subjected to immunization are already immune.

In the prevaccine era, more than 90% of all Seattle area measles cases occurred among children under the age of 9 and the median age was 5.5. There were large measles epidemics in the 1966-67 and the 1968-69 measles epidemiologic years and lesser outbreaks occurred in later years. Live virus vaccine was extensively introduced through a school immunization program in the fall of 1967 and the program was carried out subsequently for several years. In the 1970s and 1980s, passage of state immunization requirements resulted in immunization of many susceptibles who had slipped through earlier plus the reimmunization of many children who could not adequately document previous immunization.

Would it not be more cost effective and equally efficacious to focus their recommendation upon areas where measles cases have been introduced and accept an adult's statement that he or she has had the disease and the vaccine? Most diagnoses of measles cases were not called to the attention of a physician during the years when measles was epidemic and persons over the age of 22 are unlikely to have any immunization records to prove that they were immunized. Moreover, at least half of the physician-diagnosed measles cases during the recent postvaccine era have proved to be wrong.

In the example cited, it should be noted that in 64% of the cases the patients were of school age or younger and most of them had not been previously immunized. Had they been, the outbreak might also have stopped before ten generations. There is a good chance that it would have stopped at one or two generations.<sup>2,3</sup>

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### REFERENCES

1. Dales LG, Kizer KW: Measles transmission in medical facilities (Public Health and Preventive Medicine). *West J Med* 1985 Mar; 142:415-416
2. Fox JP, Elveback L, Scott W, et al: Herd immunity: Basic concept and

relevance to public health immunization practices. *Am J Epidemiol* 1971 Sep; 94:179-189

3. Amler RW, Bloch AB, Orenstein WA, et al: Imported measles in the United States. *JAMA* 1982 Nov 5; 248:2129-2133

## Upright KUB Roentgenogram

TO THE EDITOR: I am one of the authors of the article "Spontaneous Colonic Drainage—A Rare Complication of an Amebic Liver Abscess" that appeared in the February issue.<sup>1</sup> I would like to correct a typographical error in one of the figures.

On page 254, Figure 2, right picture, the caption reads "Another upright chest roentgenogram taken immediately after the episode of diarrhea." The caption should read "An upright KUB roentgenogram taken immediately after the episode of diarrhea."

Please bring this correction to the attention of your readers.

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### REFERENCE

1. Armen RC, Fry M, Heseltine PNR: Spontaneous colonic drainage—A rare complication of an amebic liver abscess. *West J Med* 1985 Feb; 142:253-255

## Holmesian Skills in Medicine

TO THE EDITOR: My imagination was captured by Sherlock Holmes when I was a child. It was a joyful occasion when in medical school an esteemed professor led me in a Holmesian exercise in observation and deduction at the bedside. At that moment medicine became fun. Since that time, I have carried the same exercise to generations of medical students. We spend two minutes at the bedside in the intensive care unit, no touching or talking allowed. We then go out of sight of the patient and deduce the case history—which is always possible if the instructor uses his or her own powers of observation in choosing a patient. Most of my students react as I did.

"The faculty of deduction is certainly contagious." The reason for its contagion lies in the joy of seeing that which one might easily have overlooked and the power of deducing important conclusions from an instantly available fact. The charm of Sherlock Holmes is the joy he derived from making obvious that which to others was obscure. He made joy out of discipline where others made only drudgery.

There is accomplishment in mastering medical discipline, to give a complex medical presentation through to the last detail of a system review without omitting a significant detail. But there is joy in observing (as opposed to seeing, of course) the body language that says that a patient is getting well, or the small sign that makes a difficult decision easy. The disci-

pline to stand at a bedside keeping one's eyes busy and mind on the sensory input has become one of the lost arts. It's a pity, because the joy goes with it. On the other hand, there is no reason why those skills cannot be developed in a home study program. It is a skill that the best clinicians have, and I am pleased that Dr Miller has detailed the Holmesian connection.<sup>1</sup>

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## REFERENCE

1. Miller L: Sherlock Holmes's methods of deductive reasoning applied to medical diagnostics (Commentary). *West J Med* 1985 Mar; 142:413-414

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TO THE EDITOR: Contrary to popular belief,<sup>1</sup> the extraordinary gift of Sherlock Holmes was not his ability to deduce (to reason from general theories to particular facts), but to induce (to reason from facts to theories). Compared with his ability to induce, Holmes's ability to deduce was quite ordinary. For example, given the general premise that all unicorns have a single horn, Holmes—and the average 10-year-old child—could readily deduce that any particular unicorn has a single horn.

The ability for induction is characteristic of skilled medical diagnosticians, but medical diagnosis also entails deduction and observation. Consider the logical sequence of evaluating a patient:

A set of diagnostic possibilities—the differential diagnosis—is generated by induction from observed facts. From each potential diagnosis, additional findings are predicted by deduction. Then, the predictions are tested against observed data (for example, laboratory results or response to treatment) to support or rule out the diagnosis.

The distinction between deduction and induction is profound; it is equivalent to the difference between hindsight and foresight. Because he wrote with hindsight, Conan Doyle sprinkled clues he had deduced after the fact; clues contrived to perplex readers who—together with real detectives and physicians—must experience mysteries with foresight. Holmes, on the other hand, enjoyed the same perspective as Conan Doyle, without which his successful inductions were no more than lucky guesses; the data he induced from can be explained by any number of alternative hypotheses.

Because deduction can be probative but induction can prove nothing, physicians have long sought deductive methods of diagnosis; for example, collecting enough data to be conclusive and seeking pathognomonic signs. These wished-for methods are based on the premise that diagnostic categories can be completely defined as a collection of their known elements. However, disregarding identities (such as a tiny head equals microcephaly), completely defined categories and pathognomonic signs are merely imaginary products of inadequate knowledge.

In the ideal universe of scientific taxonomy, diagnostic categories comprise all facts pertaining to an illness—whether the facts are known or not. In the real world of clinical medicine, however, the known diagnostic categories cannot be more complete than the set of known facts—a set that is not only incomplete, but partially incorrect as well. In former days, for example, bizarre behavior, delusions and disordered thinking were diagnostic of witchery, but contempo-

rary knowledge and diagnostic theories do not accommodate witchery. Similarly, contemporary diagnostic categories will be replaced, expanded, narrowed or deleted in the future because of enhanced knowledge and more sophisticated theories.

The belief in deductive methods of diagnosis encourages physicians to act as mere technicians—that is, as if findings dictate treatment with no need for diagnosis. Thus, if a person is delusional, chlorpromazine is indicated. If after treatment the person remains delusional, more chlorpromazine is indicated. The technician is blind to alternative diagnoses such as bipolar illness or drug toxicity.

Physicians cannot practice competent medicine by applying Holmes's fictional methods of diagnosis; they must recognize that both induction and deduction are needed for adequate medical assessment and treatment. Those physicians who abandon the logical foundations of their profession are charlatans, because their "science" is fictitious. Certainly, charlatans cannot reverse today's politically expedient trend of corrupting medical facilities into fix-it shops.

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## REFERENCE

1. Miller L: Sherlock Holmes's methods of deductive reasoning applied to medical diagnostics (Commentary). *West J Med* 1985 Mar; 142:413-414

## How Important Is Knowing It All?

TO THE EDITOR: As a primary care physician working in specialties (emergency medicine and family practice) that have considerable overlap with other specialties with regard to relevant medical knowledge, I do not feel the findings of Kronlund and Phillips<sup>1</sup> published in the April issue are very surprising. Neither are they necessarily much reflection on the competence of the physicians surveyed. They rather reflect the explosion in data relevant to the practice of medicine. I am sure this in large measure explains the increasing specialization and subspecialization of physicians. The practice of clinical medicine is usually not conceptually difficult, but human memory is simply not up to the task of "knowing it all" with the certainty required for the safe practice of medicine. Furthermore, the unique and creative aspects of human intellect (reason, assimilation, hypothesizing) are wasted in trying to do so. *Roundsmanship* too often passes for good judgment and replaces practicing the art of medicine compassionately.

I see widespread use of accessible and easy-to-use clinical computer data bases as a powerful means to free physician energy for thinking and assimilating, rather than memorizing. Such an approach will also be a major factor in alleviating one major source of residency stress—the perceived need to know it all—alluded to elsewhere in the same *WJM* April 1985 issue.<sup>2,3</sup> Paradoxically, I would probably end up having more facts at my finger tips using an easily accessible computer data base. At the moment I needed to know some fact and was, therefore, most interested and curious, I could ask the computer and instantly have the data sought. Consider this situation as opposed to being bogged down by the lengthy and sometimes fruitless searches of textbooks we all do, or simply cannot take the time to do, when we need to, during a busy clinic day. Too often the question is not answered, and the chance to learn and improve is lost. What is needed is a rapid,